

## SPANISH AND MOORISH MICRO-LEPIDOPTERA.

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(Continued from Vol. XXXVII, p. 239).

Having to a certain extent sampled the *Micro-Lepidoptera* of Andalusia in 1901, my short visit to Tangier in that year tempted me to spend the winter and spring of 1901—2 in Morocco; the results induce me to extend the scope of my paper to include a few observations upon the species found there. The work already done in this connection is to be found in the following papers:—

1. STANTON (H. T.).—“*Lepidoptera* collected in Morocco” [by Mr. Trovev Blackmore], “*Tineina*,” Ent. Mo. Mag., V, 300—1, London, 1869.
2. STANTON (H. T.).—“List of *Tortricina* and *Tineina* collected in North-West Morocco, by Mr. Trovev Blackmore, in 1870—1,” Ent. Mo. Mag., VIII, 232—6 (1872).

The only species which I have had any difficulty in recognising among those referred to by Stainton as collected by Blackmore in the neighbourhood of Tangier are a *Butalis* and a *Cemiostoma*, the latter neither named nor described. His identifications require a few criticisms but are mainly correct.

The first species that calls for remark is *Grapholita succedana*, Fröl. (Stn., Ent. Mo. Mag., VIII, 232), about which Stainton wrote with some uncertainty. I think this is, as he suspected, quite different from our English *ulicetana*, Hw., a synonym of *succedana*, Schiff., Fröl., and have described it as *Laspeyresia blackmoreana*, Wlsm. It seems to be attached to *Retama monosperma*.

His *Grapholita*, n. sp.?, allied to *microgrammana* (Stn., Ent. Mo. Mag., VIII, 233), I bred from a larva burrowing in the stems of *Malcolmia littorea*, abundant on the sandhills near Tangier, and at present I have not been able to distinguish it from specimens bred in April, 1901, from larvæ feeding in *Alyssum maritimum* at Gibraltar in March. This is now described as *Eucelis malcolmia*, Wlsm.

*Phthoroblastes spiniana*, Dp. (Stn., Ent. Mo. Mag., VIII, 233), is a wrong identification. I have described it as *Pannenc cocciferana*, Wlsm., a species greatly resembling *spiniana*, but more easily confused with *albuginana*, Gn. (*gallicolana*, Z.). It is very abundant among low growth of *Cistus salviefolius* and *crispus*, in company with *Grapholitha salvana*, Strg., of which I was at first disposed to regard it as a variety developing a white dorsal spot. It bears the same relation to *salvana* that *gallicolana*, Z., bears to *amygdalana*, Dp., formerly regarded as a mere variation.

The next species mentioned, a dull coloured *Eupæcilia* (Stn., Ent. Mo. Mag., VIII, 233), was almost certainly *Phalonia pudorana*, Stgr., common among *Solidago*, on which the larva feeds.

Of the *Lozopera* n. sp.? (Stn., Ent. Mo. Mag., VIII, 233), I bred a good series from *Elæoselinum meoides*. It was described by me as *Lozopera* (‡*Loxopera*) *mauritanica* [Ent. Mo. Mag., XXXIV, 73 (1898)].

Among the *Tineina* (Stn., Ent. Mo. Mag., VIII, 233—6), *Solenobia pretiosa*, Stn., is extremely common; so are *Micropteryx imperfectella*, Stgr., *Platyedra vilella*, Z., *Elachista sepulchrella*, Stn., and *Lithocolletis tangerensis*, Stn., the latter was said to have been beaten from *Coronilla* at the Marshen, and was suspected to feed on that plant, but the conspicuous shrub so abundant there is *Cytisus linifolius*, not a *Coronilla*. Should any one choose to call it *Genista linifolia* I take refuge in excusable ignorance of the limits of botanical genera.

The larva of *Lithocolletis tangerensis* feeds in the small narrow leaves of this plant in great abundance. Here again I may remark that the plant is very like an *Adenocarpus*, and the insect is nearly allied to, although distinct from, *adenocarpi*, Stgr.

I did not meet with *Tischeria complanella*, Hb., at Tangier, but a suffused form of *marginæa*, Hw., from hedges where *Rubus* occurs is not uncommon; the typical *marginæa* is absent, but I can only regard its representative as a variety.

*Leioptilus carphodactylus*, Hb. (Stn., Ent. Mo. Mag., VIII, 236), identified from a worn specimen, was not improbably a species found very commonly in the larval state in one very damp locality on Gibel-el-Kebir. I collected a number of larvæ, but bred only one good specimen. It fed in shoots of young plants of *Solidago*, and of another plant (also very young and therefore not identified) from the same spot. This is possibly *Pterophorus scarodactylus*, Hb., but seems to differ in having three dorsal and one apical spot on the tornal lobe of the fore-wings, and one dorsal on the costal lobe before the apex. The larva greatly resembles that of *scarodactylus* in shape and markings, so much so as to prevent me from taking the responsibility of describing it as new, although it should be easily recognised from bred specimens.

*Coleophora cæspititiella*, Z. (Stn., Ent. Mo. Mag., VIII, 235). This identification may of course be correct, but after the careful observations published by Dr. Wood, resulting in the separation and description of other species, hitherto confused with it in European collections, it would not be safe to accept it.

Among the localities mentioned in Stainton's paper the Marshen still affords some good collecting ground on its rocky slopes; but the opposite hill on the other side of the Jew's river is better, owing to its more varied vegetation, and on this hill a certain shady lane between enclosed villas, of which the best known is Mount Washington, proved rich in species. I obtained many good things here by beating the dry fences made of faggots, or wattles, of dead *Eucalyptus* and *Cytisus*. The lane emerges on high ground on the road to Cape Spartel, open on both sides, with abundant growth of *Cistus ladani-ferus*, *crispus*, and *salviaefolius*, with some heath; *Arbutus*, *Helianthemum halimifolium*, and *Teucrium fruticans*, a new *Adela* (*collicollela*, Wlsm.), and a new *Pammene* (*ornata*, Wlsm.) occurred here. Another branch of the same lane running more to the west leads to an abundant growth of *Lavatera olbia* on which two interesting species are common: *Bucculatrix lavaterella*, Mill., and *Gracilaria hedemanni*, Rbl., the latter described from the Canaries. The larva of this species makes blotch-mines in the leaves, and one generation seems to follow another in rapid succession, so that it is almost always to be found. When full-fed it reminds one much of *Acrocercops brongniardellum*, F., having the same brilliant red transverse bands across the dorsum.

A very curious gall, or swelling, in old and young wood of *Teucrium fruticans* is probably attributable to a new species of *Phalonia*, but although I collected a good supply of larvæ and found hundreds of empty pupa cases in the older wood, the larvæ were still too young when I left Tangier, and at present I have not succeeded in breeding a single specimen.

What Mr. Blackmore described to Stainton as the "Wad-el-Halk" locality is easily recognised, and lies in the direction of the house now built by Mr. Harris on the other side of the tidal river east of Tangier.

In the grounds surrounding Mr. Harris' garden I found a great variety of plants and insects; this spot produced among other good things two specimens of the very rare *Pharmacis chamomillana*, H.S., unfortunately in poor condition (this is = *pentaetina*, Mn., from Corsica).

The "peculiar kind of white broom" mentioned by Stainton (*Ent. Mo. Mag.*, VIII, 232) is of course the lovely *Retama monosperma*; an undescribed *Lithocolletis* appears to be attached to this plant, but I have not discovered its mine.

I propose to extend the list of species from Morocco very considerably in the course of this paper, but shall begin by describing a

few which are obviously new. Had I not been called back to England, thus losing a good month from the middle of March to April 16th, the list would have been a longer one, but my Italian valet, Ignazio Sola, took to the pursuit very keenly, and became an excellent collector; his previous experience with me in Corsica having been by no means forgotten. He was thus able in my absence to fill up several gaps, especially by attending to the bottles containing larvæ and pupæ, without his help I should have been disappointed in many instances, and he took several things which I had not met with.

The only excursions made from Tangier on the African coast were to the neighbourhood of Cape Spartel and to Tetuan; at the Caves of Hercules near the former, my little *Aristotelia frankeniæ*, first found in Corsica and subsequently at Malaga, proved abundant in company with *Polychrosis hibernana*, Stgr.; at the latter, in spite of very bad weather, I first made acquaintance with *Tachyptilia mauricaudella*, Oberth. (= *mirabilis*, Stgr., *LN.*), its habit is to rest in the flowers of a species of mallow, two or three being often found in one flower-tube, although frequently concealed from view until the flower is torn open. *Pleurota bicostella*, Cl., also occurred here in some abundance, obviously attached to a species of *Lavandula* (probably *dentata*), from which it was beaten wherever this occurred, and in some places where all other vegetation was conspicuously absent—it must certainly have fed upon this plant.

A very pretty new *Borkhausenia* (*iagathella*, Wlsm.), found also at Tangier, occurred near the town.

In the course of my excursion I visited Chielana twice and Malaga once, but spent a very short time on each occasion. The first of these visits was on January 26th, to look for *Gelechia gaditella*, Stgr., at Cadiz, recorded as being taken on January 29th, outside the Landthor. It was not difficult to identify the Landthor with Puerto del Tierra, within a few hundred yards of which was abundant hedge-growth of *Lycium europæum* and *Atriplex halimus*. On the former I at once observed mines of my *Gelechia lyciella* [Wlsm., Ent. Mo. Mag., XXXVI, 217 (1900)], and jumped at the conclusion that this would turn out to be *gaditella*, Stgr., the description fairly applying to it, except in the yellow or more ochreous colour of the fore-wings. This species was not on the wing, so I abandoned the search and went to Chielana, but on my return two days later, on the very day on which Staudinger took them in 1858, I found the true *gaditella* flying in great abundance by the side of the road among *Atriplex halimus* about a mile and a half from Cadiz. The difference between the two

was at once apparent, and on a subsequent occasion I was fortunately able to find the larvæ of a later brood feeding on *Atriplex halimus*, and to rear a few specimens of this beautiful little species.

1528 : 1.—ARCHIPS GRANADANUS, *sp. n.*

*Antennæ* sparsely biciliate (1); pale fuscous. *Palpi*, *Head* and *Thorax* brownish ochreous, the head slightly paler posteriorly. *Fore-wings*, ♂ brownish ochreous, with a slight pale reddish fawn-brown suffusion, becoming more intense on the outer third; a weak costal fold extends from the base to a bluish black cuneiform costal spot about the middle, somewhat obliquely placed and pointing outward, half-way between this and the apex is a faint lunate reddish brown costal patch; opposite to this, before the tornus, is a small spot of the same colour; the basal third of the terminal cilia greyish fuscous, fading towards the tornus, the outer two-thirds of the cilia, clean yellowish white, tinged with ochreous about the tornus: ♀ without markings, uniformly brownish fawn-ochreous, the dark line along the base of the white terminal cilia being as conspicuous as in the ♂. *Exp. al.* ♂ 16—♀ 20 mm. *Hind-wings* pale rosy brownish; cilia whitish, somewhat suffused with brownish, except towards the apex, a pale brownish shade running along their basal third throughout. *Abdomen* and *Legs* brownish, rather shining.

*Type*, ♂ (86119); ♀ (87013). Mus. Wlsm.

*Hab.*: SPAIN—GRANADA—Sierra Nevada, 4000—5000 ft., 3. VI.1901; Granada, 17.VI.1901. Two specimens.

The ♂ was beaten from a species of *Berberis* on the Sierra Nevada, at between 4000 and 5000 ft., the ♀ occurred also on high ground near Granada, but I do not remember to have observed any *Berberis* where this specimen was taken. Like its near ally, *unifascianus*, Dp., from which it is distinguished by its white cilia with strong basal line, it is probably polyphagous.

1647 : 1.—LOXOPERA RUBIGINANA, *sp. n.*

*Antennæ* pale ochreous. *Palpi* and *Head* brownish ochreous. *Thorax* bright rust-brown. *Fore-wings* shining silvery white on the apical third, densely suffused with brilliant rust-brown on the basal two-thirds; this suffusion extends farther along the dorsum than along the costa, almost obliterating two oblique dorsal streaks of an even more intense colour, the inner one arising at one-third from the base and tending obliquely outward to the upper edge of the cell before the middle of the wing; the second arising before the tornus, narrower and slightly more oblique but much shorter; the outer edge of the rusty suffusion is not clearly defined, some few scales of the same colour being visible on the white space beyond it; cilia yellowish-white. *Exp. al.*, 14—15 mm. *Hind-wings* pale grey; cilia white. *Abdomen* darker grey; anal tuft whitish cinereous. *Legs* whitish cinereous.

*Type*, ♂ (87451). Mus. Wlsm.

*Hab.*: MOROCCO—Mt. Washington (Tangier). Larva in old stems of *Thapsia*, *sp. excl.*, 11—13.IV.1902 (Wlsm.). ALGERIA—

[found in room at Biskra, 23.III.1895—probably bred from pupa (8311) of larva mining stems of *Ferula communis* on M'cid (Constantine), X—XI, 1894 (Eaton)]. Four specimens.

A very distinct species, of which the nearest allies are *deaurana*, Peyr., and *ferruginea*, Wlsm., but in both of these the markings are less oblique and less obliterated, moreover, they reach the costa. The hind-wings are also darker, and the two species are of somewhat larger size.

I received this first from the Rev. A. E. Eaton, who believed that a specimen found in his room at Biskra, 23.III.1895, had emerged from an empty pupa of larvæ mining stems of *Ferula communis* collected at Constantine. I have now bred three specimens from larvæ feeding in old stems of *Thapsia* sp. at Tangier.

1688. PHALONIA MORIBUNDANA, Stgr.

n. syn. = 1759. *respirantana*, Stgr.

*Cochylis moribundana*, Stgr., Stett. Ent. Ztg. XX. 230. (1859)<sup>1</sup>; Hor. Soc. Ent. Ross. XV. 244—6. (1879)<sup>2</sup>. *Cochylis respirantana*, Stgr. Hor. Soc. Ent. Ross. XV. 246. (1879)<sup>3</sup>; Rag. Ent. Mo. Mag. XVII. 232. (1881)<sup>4</sup>. *Conchylis respirantana*, Rag. Am. Soc. Ent. Fr. LXIII. (1894). 191 (1894)<sup>5</sup>; Sbl. Deutsche Ent. Zts. Iris XI. 304. (1898)<sup>6</sup>; Stgr. and Rbl. Cat. Lp. Pal. II. 1688. (1901)<sup>7</sup>. *Conchylis moribundana*, Stgr. and Rbl. Cat. Lp. Pal. II. 1759. (1901)<sup>8</sup>.

*Hab.*: ASIA MINOR <sup>7, 8</sup>—SIVAS, Amasia, 10—21. V<sup>3</sup>, VI<sup>2</sup>, S.VII<sup>3</sup>; KHUDAVENDIKIAR — Brussa <sup>2</sup>. TURKEY — Macedonia <sup>2, 8</sup>. AUSTRIA—Dalmatia <sup>2, 8</sup>. PORTUGAL <sup>8</sup>—Silves, 16.V <sup>4</sup>. SPAIN (Andalusia <sup>6-8</sup>); CADIZ—Algeciras, 4.III.1901; Chiclana, 28.II.1901, Larva—*Phlomis purpurea*, II, excl. 5.III.1901; GRANADA—Granada, 6—16.VI.1901; MALAGA—Malaga, 6.III.1858 <sup>1</sup>; 28.I.—18.II, 15—27.III, 30.IV.—1.V.1901, Larva in seeds *Phlomis purpurea* I. excl. 28.II.—24.III.1901.

This species was originally described from a single specimen found at Malaga. I found the larvæ very commonly there, and also at Chiclana feeding on the seeds of *Phlomis purpurea*, and took the species on the wing at both places.

Specimens answering to the description of *respirantana* are by no means uncommon in my very extended series, and undoubtedly confirm the suspicions entertained by Staudinger that *respirantana* is a mere variety of *moribundana*.

1758 : I.—PHALONIA LOXOPEROIDES, sp. n.

*Antennæ* pale yellowish ochreous, brownish at the base. *Palpi* whitish ochreous, *Head* and *Thorax* pale straw-yellowish. *Fore-wings* pale straw-yellowish, with

shining silvery white scales intermixed between and upon the fasciæ; two oblique and nearly parallel rust-brown fasciæ, the first arising from before the middle of the dorsum, slightly narrowed at the lower edge of the cell, bulging outward on the cell, partially interrupted below the costa and terminating in an elongate spot at the middle of the costa, from which to the base the costa is narrowly shaded with rust-brown; the outer fasciæ, of equal width, arises before the tornus and terminates on the costa before the apex, it is slightly narrowed opposite to the end of the cell and runs nearly parallel to the termen throughout, these fasciæ are slightly mottled with darker brown and silvery grey scales; cilia yellowish white, with a slender yellow line running through them near their middle; under-side brownish, with silvery cilia. *Exp. al.* 12 mm. *Hind-wings*, ♂ without subcostal fold and hair-pencil; shining pale brownish grey; cilia whitish; under-side greyish white. *Abdomen* yellowish ochreous. *Legs* brownish grey.

*Type*, ♂ (86145); ♀ (87486); Larva (87490). Mus. Wlsm.

*Hab.*: SPAIN—GRANADA—Granada, 13-19.VI.1901. MOROCCO, Tangier, 19.IV—9.V.1902, Larva in stems of *Carum verticillatum*, 12.III.excl. 4—18.V.1902. Fourteen specimens.

*Larva* dull greenish; head black; pronotal plates olive-greenish, posteriorly piceous; thoracic legs piceous.

A small species which has so much the appearance of a *Loxopera* that no one would ever think of separating it from that genus except by a study of its neuration (veins 7 and 8 of the fore-wings being separate, not stalked). In the absence of the slight costal fold and hair-pencil in the hind-wing of the ♂ it differs from at least the majority of the exponents of *Phalonia*, Hb. This character has been much overlooked, and its value in generic limitation is therefore at present of doubtful importance.

#### 1787: 1.—PHALONIA PUELLANA, *sp. n.*

*Antennæ* pale brownish grey. *Palpi* white, pale ochreous on the outer-side. *Head* white. *Thorax* pale ochreous. *Fore-wings* whitish ochreous, much suffused with pale brownish ochreous, especially on the basal third, on the central fasciæ, and about the terminal portion of the wing; the fasciæ, which is somewhat obscurely indicated, arises narrowly on the dorsum, before the middle and tending obliquely outward becomes sinuate across the middle of the wing, ending in a rosy-pink suffusion with a few fuscous scales on the costa to which it is bent back above the middle; a pale rosy suffusion is traceable all along the costal third of the wing and becomes more intense towards the apex, the brownish ochreous shading being slightly interrupted by paler scales opposite to the middle of the termen; cilia pale brownish ochreous; under-side greyish, with a rosy suffusion about the apex. *Exp. al.* 9-10 mm. *Hind-wings* pale greyish; cilia shining whitish; under-side shining pale bluish grey. *Abdomen* pale grey; anal tuft pale ochreous. *Legs* whitish.

*Type*, ♂ (87365); ♀ (87374). Mus. Wlsm.

*Hab.*: MOROCCO—Tangier, 11-16.V.1902. Eleven specimens.

Taken among *Scabiosa* and *Retama monosperma*, but I was unable to obtain any indication of its food-plant. It is closely allied to *infantana*, Knl., and *roseofasciana*, Mn., but has a more washed-out appearance, the markings being less distinct, and the rosy flush confined to the costal third.

Oberthür's figure of his supposed *ostrinana*, Gn. [Etud., Ent., XII, 43, Pl. VI, 26 (1888)], strongly reminds me of this insect, but he specially mentions that Guenée's type, which he also possesses, is, "plus foncé; il a la teinte de *Purpuratana*, H.-S.", and the figure by no means represents the usual forms of *purpuratana*, H.S., sunk by Ragonot as a synonym of *ostrinana*, Gn.

While agreeing with Ragonot in this synonymy I am greatly inclined to think that the species figured by M. Oberthür must be a distinct species.

2010 : 1.—*GYPSONOMA PÆDISCANA*, Stgr.

*Grapholitha pædiscana*, Stgr., Stett. Ent. Ztg., XX, 233, No. 59 (1859).<sup>1</sup>

*Hab.* : SPAIN—GRANADA—Granada, 6-10.VI.1901; MALAGA—Malaga, 13.III.1901; SEVILLA—Seville, Larva *Populus alba*, XII, 1900, excl. 29.I—9.III.1901; HUELVA—Coto, 24.IV.1901; CADIZ—Chiclana, IV.1858<sup>1</sup>. MOROCCO—Tangier, 2.V.1902.

This species, which is very closely allied to *dealbana*, Fröl., may be distinguished by its more deeply sinuate termen, and by its usually narrower white fascia.

I have bred it from *Populus alba*, and met with it plentifully in different parts of Andalusia, but have never found the larva boring the twigs after the manner of *dealbana*. It seems invariably to live between united leaves.

2044 : 1.—*THIODIA STRIGULATANA*, Knl.

*Grapholitha strigulatana*, Knl., Deutsche Ent. Zts. Iris, XII, 41-2, No. 39. Pl. I. 40 (1899)<sup>1</sup>; Stgr. and Rbl. Cat. Lp. Pal. II. 2167 (1901)<sup>2</sup>.

*Hab.* : MONTE CARLO, 2.VI.1899. FRANCE (Pyr. or.)—Vernet, 26.V.1899; Thuès-les-bains, 28-30.VI.1900. PORTUGAL<sup>1</sup>. MOROCCO—Tangier, 22.III.1902.

This species, of obscure colour and without discal markings, except so far as they are indicated by two very slight clouds, cannot well be confused with any other. It is of rather large size, some specimens being quite equal to the largest forms of the variable



*aspidiscana*, Hb., in colouring it nearly resembles the true *wimmerana*, Tr. (not *candidulana*, Nlk., = the species which has passed under the name of *wimmerana*, Tr., *teste* Wilk., in English collections), but it differs in the much less distinct costal streaks, and the almost total extinction of the ocelloid patch, as well as in its larger size (18–22 mm.). I first met with it at Vernet in May, 1899, and subsequently, in the beginning of June the same year, at Monte Carlo, and put it aside as probably a variety of some known species. Finding it again at Thuès-les-bains in the following year, as late as the end of June, I was still unable to recognise it, but having met with two specimens at Tangier in March, 1902, I have no hesitation in identifying them all as *strigulatana*, Knl., described from "Lusitania." The Morocco specimens are slightly larger than the European, but cannot be separated from them by any other distinguishing character. The range of the species appears to be fairly wide.

(To be continued).

HELP-NOTES TOWARDS THE DETERMINATION OF BRITISH  
TENTHREDINIDÆ, &c. (4).

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SYNOPTIC TABLE OF GENERIC CHARACTERS.

Each Section of this Table is numbered *on the left*; a figure in brackets following refers back to the Section last quitted; the figures *on the right* indicate the Section to be next consulted.

*a.* area, *n.* nerve (transverse), *ss.* saw-sheath, *abd.* abdomen, *ant.* antennæ, *mand.* mandible, *clyp.* clypeus, *h.w.* hind-wing (alar characters unless otherwise stated are taken from the fore-wing), *before* = nearer the base, *after* = nearer the apex.

- 1      Discoidal *n.* ends *on the subcosta*—at or before the origin of the cubitus.  
      *Ant.* mostly with 9 joints, sometimes fewer, very seldom more. Pronotum always deeply emarginate. (Fam. TENTHREDINIDÆ).....13.
- Discoidal *n.* ends *on the cubitus*—generally much after its origin. *Ant.* generally with about 18 joints or more, the intermediate joints generally very short in comparison with their breadth, and subequal...2.
- 2 (1) Base of pronotum deeply excised. (Fam. SIRICIDÆ) .....11.
- Base of pronotum slightly emarginate, or truncate. (Fam. LYDIDÆ)...3.
- 3 (2) Basal three joints of *ant.* longer than all the rest together, and phenomenally thicker! Third joint at least as long as the whole of those following. (Very small insect with delicate glassy and pale-veined wings, and the ♀ with an extremely long *toothless* saw) .....*Xyela*.
- *Ant.* otherwise constructed .....4.
- 4 (3) *Abd.* broad and flattened above: apex of front tibiæ with *two* spurs...5.
- *Abd.* long and narrow, laterally compressed: front tibiæ with *one* spur...7.